

REMARKS

This Amendment is filed in response to the Final Office Action mailed on June 12, 2007. The Applicant respectfully requests reconsideration in light of the below discussions. The objections and rejections are respectfully traversed.

Claims 1, 4, 8-11, 13-16, 18-20 and 24-42 are pending in the case.

No claims have been added or amended.

Response to Examiner's Response to Arguments

The Applicant thanks the Examiner for responding specifically to the Applicant's arguments at paragraph 5 of the Office Action, and would like to respond specifically in turn in hopes that agreement may be reached.

At paragraph 5 of the Office Action, the Examiner likens the Applicant's claimed "protocol type" to Crayford's 2-byte VLAN Ethertype field (*see* Crayford Fig. 7B, frame 142, VLAN Type field). The Office Action further discusses Crayford's Type/Length field (*see* Crayford 7A, frame 140, Type/Length field). Even assuming, for purposes of argument, that these are analogous to the Applicant's protocol type, Crayford would still not suggest what the Applicant claims.

Importantly, Crayford never uses either the 2-byte VLAN Ethertype field or the Type/Length field in determining an internal VLAN designation/index. Crayford states at col. 8, lines 38-44 that "[t]he host processor 120 maps the 16-bit VLAN IDs into 5-bit VLAN indexes in a VLAN index-to-identifier (ID) table. In this manner, the entire 16-bit VLAN identifier does not have to be transmitted with the frame....[i]nstead only a 5-bit VLAN index is transmitted along with the frame...." Thus Crayford uses the 16-bit VLAN ID field in the mapping.

The 16-bit VLAN IDs does not include the 2-byte VLAN Ethertype field or the Type/Length field. Specifically, at col. 8, lines 33-34 Crayford discusses a separate 2-byte [i.e., 16-bit] VLAN Ethertype field and a separate 2-byte [i.e., 16-bit] VLAN ID field. Similarly, a separate Type/Length field is clearly shown in Fig. 7A, frame 140.

Thus a fair reading of Crayford must conclude that the VLAN index is determined simply in response to the 16-bit VLAN ID, and not in response to the separate VLAN Ethertype field or the Type/Length field of packets.

Accordingly, Crayford operates quite differently from what the Applicant claims. For example, looking to the Applicant's claim 32, the Applicant specifically recites "*concatenating the protocol code together with the VLAN value to produce a mapping address*" and "*applying the mapping address to a memory structure to obtain a derived VLAN value that is based upon both the frame's protocol type and VLAN value associated with the input port, the derived VLAN value to differ from at least one other derived VLAN value for another frame received on the input port, but having a different protocol type.*" Thus unlike Crayford, a protocol code is used in determining a derived VLAN, and differing protocol codes may cause otherwise similar packets to be associated with differing derived VLAN values. Such a novel feature permits a number of advantages described by the Applicant in the specification. Such advantages would not be obtained in a system that functions in the manner taught by Crayford.

Claims Rejected Under 35 U.S.C. § 102

At paragraphs 1-2 of the Office Action, claims 1-2, 5, 7, 9-11, 13-16, 18-20, 24, 26, 28, 30, 32-34 and 36-37 were rejected under 35 U.S.C. §102(e) over Crayford.

The Applicant's claim 32, representative in part of the other rejected claims, sets forth:

32. A method comprising:

receiving a frame at a input port, the frame including a protocol type;
accessing a virtual local area network (VLAN) value associated with the input port;
associating the frame with a protocol code based on the frame's protocol type;
concatenating the protocol code together with the VLAN value to produce a mapping address;
applying the mapping address to a memory structure to obtain a derived VLAN value that is based upon both the frame's protocol type and VLAN value associated with the input port, the derived VLAN value to differ from at least one other derived VLAN value for another frame received on the input port, but having a different protocol type;
accessing a forwarding database with the derived VLAN value to determine a destination address; and
forwarding the frame to an output port for transmission to the destination address.

Crayford describes a network switch for switching frames among multiple ports, in which the number of VLANs supported may be scaled. *See* col. 2, lines 10-13. The switch supports “tagged frames,” which include a 2-byte VLAN ID field (see Fig. 7B, frame 142, VLAN ID field) and a 2-byte VLAN Ethertype field (*see* Fig 7B, frame 142, VLAN Type field). *See* Col. 8, lines 32-35. The switch also support “untagged frames,” which do not have VLAN IDs, but include a Type/Length field. *See* Fig. 7A, frame 140, Type/Length field and col. 8, lines 30-32. For tagged frames, the 2-byte VLAN ID value is mapped to a corresponding 5-bit VLAN index value that is then used in forwarding the frames. *See* col. 8, lines 38-48 and col. 9, lines 60-62 and Fig. 19. For untagged frames, Source Address (SA), receive (RX) port number, and Destination Address (DA) are used to look up the 5-bit VLAN index values, which are then used in forwarding the frames. *See* col. 8, lines 52-62 *see* col. 10, lines 14-18. The 2-byte VLAN Ethertype field and the Type/Length field are not used in these mappings.

The Applicant respectfully urges that Crayford is silent concerning the Applicant's claimed “*concatenating the protocol code together with the VLAN value to produce a*

mapping address” and “*applying the mapping address to a memory structure to obtain a derived VLAN value that is based upon both the frame’s protocol type and VLAN value associated with the input port*” and “*the derived VLAN to differ from at least one other derived VLAN value for another frame received on the input port, but having a different protocol type.*”

Rather than producing a mapping address by concatenation of a protocol code with a VLAN value, and using such mapping address to obtain a derived VLAN, Crayford simply determines a 5-bit VLAN index in response to a 16-bit VLAN ID. A protocol code is not concatenated and then used in Crayford’s mapping. The Applicant respectfully directs the Examiner’s attention to the “Response to Examiner’s Response to Arguments” for more discussion on this issue. As Crayford operates in a very different manner than what the Applicant claims, the Applicant respectfully requests reconsideration of the rejections and the issue of notice of allowance or a non-final Office Action.

In summary, the Applicant respectfully urges that Crayford is legally insufficient to anticipate or make obvious the Applicant’s claims due at least to the absence of a teaching of suggestion of “*concatenating the protocol code together with the VLAN value to produce a mapping address*” and “*applying the mapping address to a memory structure to obtain a derived VLAN value that is based upon both the frame’s protocol type and VLAN value associated with the input port*” and “*the derived VLAN to differ from at least one other derived VLAN value for another frame received on the input port, but having a different protocol type.*”

Claims Rejected Under 35 U.S.C. § 103

At paragraph 3-4 of the Office Action, the claim 3-4, 6, 8, 25, 27, 29, 31, 35, and 38-42 were rejected under 35 U.S.C. § 103(a) in light of Crayford in view of Shani, U.S. Patent No. 6,023,563, issued on February 8, 2000 (hereinafter “Shani”).

The Applicant's claim 39, representative in part of the other rejected claims, sets forth:

39. A method comprising:

receiving a frame at a input port, the frame including a protocol type and a source address;

in response to the protocol type indicating a particular protocol type, parsing the source address to obtain a subnet value;

applying the subnet value to a memory structure to map the subnet value to a derived VLAN value, the derived VLAN value to differ from at least one other derived VLAN value for another frame received on the input port, but having a different subnet value;

accessing a forwarding database with the derived VLAN value to determine a destination address; and,

forwarding the frame to an output port for transmission to the destination address.

Crayford is discussed above.

Shani discloses a table that "uses the port number as a unique key and correlates multiple VLAN and network/subnet numbers." *See* col. 9, lines 49-51. The table is shown in Shani's Fig. 2a, which is described as "a table in which the port number is the key." *See* col. 8, line 56.

The Applicant respectfully urges that the combination of Crayford and Shani does not teach or suggest the Applicant's claimed "*applying the subnet value to a memory structure to map the subnet value to a derived VLAN value, the derived VLAN value to differ from at least one other derived VLAN value for another frame received on the input port, but having a different subnet value.*"

At page 13 of the Office Action, the Examiner agrees that Crayford does not teach or suggest this feature and points to Shani. Yet Shani also does not disclose this feature. Rather than suggest *applying the subnet value to a memory structure to map the subnet value to a derived VLAN value*, Shani discusses applying a port number to a table to yield a VLAN and a network/subnet number. The Applicant respectfully directs the Examiner's attention to col. 8, line 56 of Shani which makes clear a port number is being applied. Accordingly, as Shani does not

remedy the deficiencies of Crayford, the Applicant respectfully requests reconsideration of the rejections.

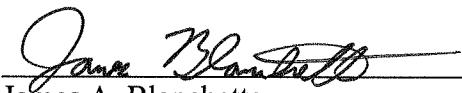
In summary, the Applicant respectfully urges that the combination of Crayford and Shani is legally insufficient to make obvious the Applicant's claims due at least to the absence of a teaching or suggestion of "*applying the subnet value to a memory structure to map the subnet value to a derived VLAN value, the derived VLAN value to differ from at least one other derived VLAN value for another frame received on the input port, but having a different subnet value.*"

In the event that the Examiner deems personal contact desirable in disposition of this case, the Examiner is encouraged to call the undersigned attorney at (617) 951-2500.

All the independent claims are believed to be in condition for allowance and therefore all dependent claims that depend there from are believed to be in condition for allowance. The Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,


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